



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

K12
2/13/03
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In re application of:

Touj et al.

Serial No.: 09/851,983

Art Unit: 1712

Filed : May 9, 2001

Examiner: Marc S. Zimmer

Title : Top Coating Composition

DECLARATION UNDER 37 C.F.R. § 1.132

Honorable Commissioner of Patents and Trademarks,
Washington, D.C. 20231

Sir:

I, HISAKI TANABE, a citizen of Japan and having postal
mailing address of 7-9, Yawata Musashishiba, Yawata-city,
Kyoto, 614-8052 JAPAN, declare and say that:

In March 1977, I graduated from Osaka University,
and received a Bachelor degree;

From April 1977, up till the present, I have been
employed by Nippon Paint Corporation, and engaged in

research and development for automotive coatings in

product development in the automotive coatings division;

I am one of the inventors of the above-identified application and am familiar with the subject matter of the above-identified application;

I have read the Official Action mailed and the references cited therein and am familiar with the subject matter thereof;

I respectfully submit herewith my exact report thereon;

In order to demonstrate that silicate-grafted resin (IV) resulting from graft polymerization of a silicate compound (II) onto a hydrolysable silyl-containing resin (III) is more excellent than the top coating composition

which comprises a silicate compound (II) and a hydrolysable silyl-containing resin (III) in preventing whitening after water resistance testing and in water resistance, I have evaluated the turbidity and adhesion of the coating films obtained in Examples and Comparative Examples of the specification. The results are shown in Table 1.

Evaluation Method

(1) Turbidity (transmittance of all light rays)

The clear films were evaluated for transmittance of all light rays (400 to 700 nm within the visible light range) determined by using Spectrophotometer (U-3200, product of Hitachi Instruments Service). The value of 100 % means that the evaluated clear film does not absorb

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any light ray. Thus the higher value means that the clear film has higher transparency.

(2) Adhesion after water resistance test

Each coated panel was immersed into a water tank at 40°C for 10 days. Then, the coated panel was subjected to grid pattern cutting using a cutter knife to form 100 squares with a width of 2 mm. An adhesive cellophane tape was affixed on the surface thereof and then rapidly peeled off. Squares remaining unpeeled were counted.

100/100 Good (There was no peeled area.)

0/100 Inferiority (All over the surface was peeled.)

Table 1

	Example						Compar. Ex.		
	1	2	3	4	5		1	2	3
Formulation Silicate compound	10	20					10		
			30					20	
Hydrozable silyl- containing resin	5	20	30						
Silicate graft resin Organic film-forming component				56					
					125				
components	49	42	37	29			49	42	52
	46	38	33	35	21		46	38	48
	10	20	30	20	46		10	20	0
% Hydrolyzable silyl-containing resin relative to total resin components	5	20	30	0	0		0	0	0
% Silicate-grafted resin relative to total resin components	0	0	0	47	86		0	0	0
Turbidity	87	86	82	91	91		56	45	90
	84	85	82	92	90		49	43	91
	85	82	81	90	89		45	40	90
Adhesion after water resistance	98/100	85/100	80/100	100/100	100/100		0/100	0/100	100/100

*1: Mitsubishi Rayon's Dianal IR 2562 (OHV=166, number average molecular weight=4000, nonvolatile matter = 61%)

*2: Mitsubishi Chemical's Mitec NY 215A (nonbolatile matter=75%)

The result shows that silicate-grafted resin (IV) resulting from graft polymerization of a silicate compounds (II) onto a hydrolysable silyl-containing resin (III) (Examples 4 and 5) is more excellent than the top coating composition which comprises a silicate compound (II) and a hydrolysable silyl-containing resin (III) (Examples 1-3) in preventing whitening after water resistance testing and in water resistance.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

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punishable by fine or imprisonment, or both, under Section
1001 of Title 18 of the United States Code and that such
willful false statements may jeopardize the validity of
the application or any patent issued thereon.

Signed this day of January, 2003

Hisaki Tanabe

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